We Claim:

1. A radiation-emitting semiconductor component, comprising:

a multilayer structure including an active layer for generating radiation in said multilayer structure;

electrical contacts connected to said active layer;

a radiation-transmissive window with a first main surface adjoining said multilayer structure and a second main surface opposite said first main surface;

said second main surface having at least one void selected from the group consisting of a trench recess and a pit recess formed therein for increasing a coupling-out of radiation from said window.

2. The semiconductor component according to claim 1, wherein said window is formed with side surfaces perpendicular to said first and second main surfaces.

3. The semiconductor component according to claim 1, wherein said window is formed with side surfaces having partial regions orthogonal to said first and second main surfaces.

4. The semiconductor component according to claim 1, wherein said window has an enveloping basic shape selected from the group consisting of parallelepiped shapes and cuboid shapes.

5. The semiconductor component according to claim 1, wherein said void has at least one planar side surface enclosing an angle different from 90° with said second main surface.

6. The semiconductor component according to claim 5, wherein said angle is between 20° and 70°.

7. The semiconductor component according to claim 1, wherein said void has a bottom surface substantially parallel to said second main surface.

8. The semiconductor component according to claim 1, wherein said void is a trench recess formed with a triangular or trapezoidal cross section tapering toward said first main surface.

9. The semiconductor component according to claim 1, wherein said at least one void is one of a plurality of trench recesses formed in said window.

10. The semiconductor component according to claim 1, wherein said void is bounded by at least one curved surface.

11. The semiconductor component according to claim 10, wherein said void has a form substantially describing a hemisphere, a sphere segment, an ellipsoid segment, a cone, or a truncated cone.

12. The semiconductor component according to claim 1, wherein said window has a refractive index greater than a refractive index of said multilayer structure.

13. The semiconductor component according to claim 1, wherein said window contains a material selected from the group consisting of sapphire, quartz glass, diamond, ITO, SnO, ZnO, InO, SiC, and GaP.

14. The semiconductor component according to claim 1, wherein said multilayer structure is based on GaN.

15. The semiconductor component according to claim 14, wherein said multilayer structure contains at least one gallium compound selected from the group consisting of GaN, $Al_{1-x}Ga_xN$ ($0 \leq x \leq 1$), $In_{1-x}Ga_xN$ ($0 \leq x \leq 1$), and $Al_{1-x-y}In_xGa_yN$ ($0 \leq x \leq 1$), $0 \leq y \leq 1$).

16. The semiconductor component according to claim 1, wherein said multilayer structure is an epitaxy product.

17. The semiconductor component according to claim 16, wherein said multilayer structure is deposited on an epitaxial substrate and said window is produced from said epitaxial substrate.

18. The semiconductor component according to claim 1, wherein said window is connected to said multilayer structure by a wafer bonding process.

19. A method for producing a semiconductor component, the method which comprises the following steps:

providing a window layer having a first main surface and a second main surface opposite the first main surface;

applying a semiconductor layer sequence to the first main surface of the window layer;

forming at least one recess in the window layer from the second main surface; and

completing the semiconductor component according to claim 1.

20. The method according to claim 19, which comprises depositing the semiconductor layer sequence on the window layer by epitaxy.

21. The method according to claim 19, which comprises applying the semiconductor layer sequence to the window layer in a wafer bonding process.

22. The method according to claim 19, which comprises forming the recess by sawing into the window layer on the second main surface.

23. The method according to claim 22, which comprises sawing with a saw blade having a shaping edge.

24. The method according to claim 23, which comprises sawing with a saw blade having a trapezoidal cross section in a sawing region.

25. The method according to claim 19, which comprises etching the recess into the second main surface.

26. The method according to claim 19, which comprises forming the recess with a laser ablation process.